($US27,682). **CONCLUSION:** As far as effectiveness, ambulatory care are the same. Self-injection therapy is preferable, especially including indirect costs.

PAR4

COST-EFFECTIVENESS OF TUMOR NECROSIS FACTOR ALPHA (TNF-ALPHA) INHIBITORS AS FIRST-LINE AGENTS IN RHEUMATOID ARTHRITIS

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Rheumatoid arthritis (RA) is an autoimmune disease with an unknown etiology that results in over 9 million physician visits and more than 250,000 hospitalizations per year. TNF-alpha inhibitors are effective agents in treating RA. However, their cost-effectiveness as first-line agents has not been investigated. **OBJECTIVE:** To examine the cost-effectiveness of using TNF-alpha inhibitors as first-line agents in rheumatoid arthritis from a societal perspective, and secondly determine which of the current TNF-alpha inhibitors is the most cost-effective in this role. **METHODS:** A Markov model was developed utilizing a discount rate of 3% and a lifetime time horizon for a hypothetical cohort of United States females aged 55–60 who are diagnosed with RA. The source of data for predicted probabilities, expected mortality rates, and treatment costs in year 2003 dollars (drug, toxicity, monitoring, and hospitalization) is from the literature. These costs are assigned in five-year cycles along with the effect on quality adjusted life years (QALY), which is a function of the Health Assessment Questionnaire score. A sensitivity analysis was conducted on all relevant parameters. **RESULTS:** Etanercept was the most cost-effective TNF-alpha inhibitor. It had an incremental cost-effectiveness ratio (ICER) of $80,350 versus standard therapy. When taking into consideration age of diagnosis and potential reduction in compliance-related efficacy with traditional DMARDS, the ICER varies from $56,412 to $86,211. When assigned etanercept's first-line efficacy in the sensitivity analysis, adalimumab (ADAL) and infliximab (INF) had ICERs of $82,783 and $65,881 versus standard therapy, respectively. **CONCLUSION:** Depending where the cost-effective threshold is drawn ($50,000–$100,000), etanercept is relatively cost-effective versus standard care at $80,350. ADAL and INF may also be cost-effective depending on results of future head-to-head monotherapy trials.

PAR5

COST-EFFECTIVENESS OF ADALIMUMAB (HUMIRA™) IN THE TREATMENT OF US PATIENTS WITH RHEUMATOID ARTHRITIS (RA)

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OBJECTIVE: Adalimumab is a new human TNF-antagonist monoclonal antibody used to treat patients with moderate to severe RA. We used an economic model to compare its cost effectiveness to other biologic disease modifying anti-rheumatic drugs (DMARDs) such as etanercept and infliximab. **METHODS:** Adhering to the US cost-effectiveness panel and AMCP guidance, the model evaluated adalimumab with methotrexate (MTX) as it would be given in typical practice. The analysis was performed over 3 years from a payor's perspective and is based on individual simulation of 10,000 RA patients. Patients' clinical responses were evaluated every six months. Probabilities were derived from clinical (Phase III ARMADA trial) and long-term observational databases. Costs included the drug, monitoring, administration, RA-related hospitalization and treatment of adverse events. Comprehensive sensitivity analyses were performed to highlight key uncertainties. **RESULTS:** Using ACR50 clinical response data, adalimumab + MTX resulted in a more sustained response with a lower cost-effectiveness ratio compared to etanercept + MTX and with infliximab + MTX. Adalimumab data entered into the 3-year model yielded findings that patients had 1.36 years of good clinical response and a cost-effectiveness ratio of $45,600 per year of response. Results for etanercept + MTX were 1.16 years and $53,900, while results for infliximab + MTX were 0.69 years and $95,600. Sensitivity analysis on clinical response confidence intervals (CIs) revealed that cost-effectiveness of the biologics overlapped, however CIs for adalimumab were narrower because of larger trial sample sizes. **CONCLUSION:** Uncertainty in comparative efficacy is currently too large to definitively prove that one biologic DMARD is always more cost-effective than the others, but larger sample sizes in adalimumab trials give higher certainty regarding its efficacy. Since formulary decisions are made on data currently available, these results suggest that adalimumab + MTX is as cost effective and possibly more cost effective than the other biologic DMARDs.

PAR6

COST-EFFECTIVENESS OF TREATMENT STRATEGIES FOR RHEUMATOID ARTHRITIS PATIENTS WITH INADEQUATE RESPONSE TO METHOTREXATE

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BACKGROUND: Several treatment options are now available for rheumatoid arthritis patients that have inadequate response to methotrexate alone. These agents are different in terms of their efficacy, safety, cost, and ease of administration. This makes it essential to perform a cost-effectiveness analysis taking into account the important clinical and cost differences. This model focuses on two combinations with proven efficacy, in adequate well controlled trials, for patients with inadequate response to methotrexate. **OBJECTIVE:** Compare 2-year cost-effectiveness of two different treatment strategies, from the societal perspective, for rheumatoid arthritis patients with inadequate response to methotrexate: 1) Start patients on methotrexate (MTX) + leflunomide (LEF), 2) Start patients on MTX + tumor necrosis factor a (TNF-a). **METHODS:** A 2-year decision analysis model with four semiannual cycles was developed to estimate the average cost/QALY, and the incremental cost-effectiveness ratio (ICER) for the two options, for female patients with mean age of 50 years. The model input parameters such as; response rates, dropout rates, costs, and QoL values were obtained either from published literature, or from expert opinion. Univariate sensitivity analysis was conducted to estimate percent changes in ICER from the base case analysis with change in gender, age, response rates, drug costs, and other parameters. **RESULTS:** The 2-year base case average cost/QALY is $8,551 for patients started on MTX + LEF, and $19,340 for patients started on MTX + TNF-a. The base case ICER for MTX + TNF-a is $36,147. In the univariate sensitivity analysis, ICERs varied from $25,267 to $63,479. The model was extremely sensitive to change in drug costs, and to the method used for conversion of HAQ/QoL scores into QALYs. **CONCLUSION:** This 2-year cost-effectiveness model suggests that for patients with inadequate response to methotrexate alone, the combination of MTX + TNF-a is a cost-effective strategy compared to MTX + LEF.